South Dakota Alternate Academic Content and Achievement Standards

Science Summary

Board Approved
January 24, 2006

KINDERGARTEN SCIENCE ALTERNATE CONTENT STANDARDS

Nature of Science Standards

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at this grade level.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Note: Mastery is not expected at this grade level.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standards	Alternate Content Standards
K.P.1.1. Use senses to describe solid objects in terms of physical attributes.	K.A.P.1.1. Use senses to recognize solid objects by a physical attributes.
K.P.1.2. Identify water in its solid and liquid forms.	K.A.P.1.2. Recognize water in its liquid form.

South Dakota Kindergarten Physical Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Use senses to identify solid objects by a physical attributes. • Illustrate water in its liquid form**.**
Applying	• Use senses to recognize solid objects by a physical attributes. • Recognize water in its liquid form.
Developing	• Use senses to recognize similarities between solid objects. • Explore water in its liquid form.
Introducing	• Use senses to explore solid objects. • Attend to exploration of water in its liquid form by others.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standards	Alternate Content Standards
K.L.1.1. Sort living from non-living things.	K.A.L.1.1. Recognize living from non-living things.

South Dakota Kindergarten Life Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Identify living and non-living things.
Applying	• Recognize living from non-living things.
Developing	• Explore various living and non-living things.
Introducing	• Explore various living things.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standards	Alternate Content Standards
K.E.1.1. Describe simple Earth patterns in daily life.	K.A.E.1.1. Recognize the difference between day and night.

South Dakota Kindergarten Earth/Space Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Identify an activity of day and at night.
Applying	• Recognize the difference between day and night.
Developing	• Explore pictures of day and night.
Introducing	• Respond to illustrations/media depicting day and night.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY STANDARDS

Goal 5: Students will identify and evaluate the relationship and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

Note: Mastery is not expected at this grade level.

Indicator 2: Analyze the relationship/interactions among science, technology, environment, and society.

Note: Mastery is not expected at this grade level.

1st GRADE SCIENCE ALTERNATE CONTENT STANDARDS

Nature of Science Standards

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at this grade level.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Note: Mastery is not expected at this grade level.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standards	Alternate Content Standards
1.P.1.1. Categorize objects by physical attributes such as color, size, and shape.	1.A.P.1.1 Recognize objects by color and shape.
1.P.1.2. Compare objects in terms of heavier or lighter.	1.A.P.1.2 Recognize objects in terms of heavier or lighter.
1.P.1.3. Predict how common materials interact with water.	1.A.P.1.3 Demonstrate objects sinking or floating in water.

Indicator 2: Analyze forces, their forms, and their effects on motions.

General Education Standards	Alternate Content Standards
1.P.2.1. Describe relative positions of objects.	1.A.P.2.1. Demonstrate the relative positions of objects.

South Dakota 1st Grade Physical Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Identify objects by color and shape. • Identify objects in terms of heavier or lighter. • Determine which objects will sink or float in water. • Identify the relative positions of objects.

Applying	• Recognize objects by color and shape. • Recognize objects in terms of heavier or lighter. • Demonstrate objects sinking or floating in water. • Demonstrate the relative positions of objects.
Developing	• Explore objects by color or shape. • Explore objects together in terms of heavier and lighter. • Recognize whether objects sink or float in water. • Locate the relative positions of objects.
Introducing	• Respond to objects by shape. • Explore objects in terms of heavier or lighter. • Explore objects in water. • Imitate relative positions of objects.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standards	Alternate Content Standards
1.L.1.1. Discover life needs of green plants.	1.A.L.1.1. Identify that green plants need water/sun to live.
1.L.1.2. Identify the parts of a plant.	1.A.L.1.2. Identify the stem and leaves of a plant.
1.L.1.3. List life needs of people and other animals.	1.A.L.1.3. Recognize that animals have life needs.

Indicator 2: Analyze various patterns of inheritance and biological change.

General Education Standards	Alternate Content Standards
1.L.2.1. Describe physical similarities and differences between parents and offspring.	1.A.L.2.1. Recognize physical similarities between parents and offspring.

Indicator 3: Analyze how organisms are linked to one another and the environment.

General Education Standards	Alternate Content Standards
1.L.3.1. Relate characteristics of plants and animals that allow them to live in specific habitats.	1.A.L.3.1. Identify an animal in its habitat.

South Dakota 1st Grade Life Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Demonstrate that green plants need water and sun to live. • Describe the stem and leaves of a plant. • Identify the life needs of animals. • Identify two physical similarities between parents and offspring. • Identify two animals and their habitats.
Applying	• Identify that green plants need water/sun to live. • Identify the stem and leaves of a plant. • Recognize that animals have life needs. • Recognize physical similarities between parents and offspring. • Identify an animal in its habitat.
Developing	• Recognize that green plants need water and sun to live. • Recognize the stem and leaves of a plant. • Recognize pictures/objects of animal life needs. • Recognize physical features between parents and offspring. • Recognize that an animal has a habitat.
Introducing	• Use senses to explore green plants. • Explore the stem and leaves of a plant. • Explore the life needs of animals. • Explore physical features between parents and offspring. • Explore an animal in its habitat**.**

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standards	Alternate Content Standards
1.E.1.1. Recognize changes in weather over time.	1.A.E.1.1. Recognize today's current weather.
1.E.1.2. Describe rocks in terms of properties.	1.A.E.1.2. Recognize a rock.

South Dakota 1st Grade Earth/Space Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Recognize two details of today's current weather. • Discriminate a rock from another item.
Applying	• Recognize today's current weather. • Recognize a rock.
Developing	• Recognize whether it is sunny or rainy • Explore pictures and examples of rocks.
Introducing	• Respond to representations/ illustrations of the current weather. • Explore various rocks.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY STANDARDS

Goal 5: Students will identify and evaluate the relationship and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

Note: Mastery is not expected at this grade level.

Indicator 2: Analyze the relationship/interactions among science, technology, environment, and society.

Note: Mastery is not expected at this grade level.

2nd GRADE SCIENCE ALTERNATE CONTENT STANDARDS

Nature of Science Standards

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at this grade level.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Note: Mastery is not expected at this grade level.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standards	Alternate Content Standards
2. P.1.1. Classify solids in terms of the materials they are made of and their physical properties.	2.A.P.1.1. Recognize solids in terms of rough or smooth texture.
2.P.1.2. Describe visually observable properties of liquids and classify liquids by their physical properties.	2.A.P.1.2. Recognize that liquids can change colors.
2.P.1.3. Identify mixtures of solid substances and ways to separate them.	2.A.P.1.3. Recognize mixtures of solid substances.

Indicator 2: Analyze forces, their forms, and their effects on motions.

General Education Standards	Alternate Content Standards
2.P.2.1. Demonstrate how moving objects exhibit different types of motion.	2.A.P.2.1. Compare moving objects of fast and slow motion.
2.P.2.2. Predict the effects of magnets on other magnets and other objects.	2.A.P.2.2. Identify the effects of magnets on other objects.

Indicator 3: Analyze interactions of energy and matter.

General Education Standards	Alternate Content Standards
2.P.3.1. Compare sounds in terms of high pitch, low pitch, loud and soft (volume).	2.A.P.3.1. Recognize sounds/vibrations in terms of loud and soft (volume).

South Dakota 2nd Grade Physical Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Identify solids in terms of rough or smooth texture • Demonstrate changes in colors of liquids. • Demonstrate a mixture of solid substances. • Identify fast and slow motion of moving objects • Compare effects of magnets on other objects. • Demonstrate loud and soft (volume).
Applying	• Recognize solids in terms of rough or smooth texture. • Recognize that liquids can change colors. • Recognize mixtures of solid substances. • Compare moving objects of fast and slow motion • Identify the effects of magnets on other objects. • Recognize sounds/vibration in terms of loud and soft (volume).
Developing	• Explore solids with rough or smooth textures. • Explore the changes in the color of liquids. • Explore mixtures of solid substances. • Recognize that moving objects move fast or slow. • Recognize effects of magnets on various materials. • Indicate loud and soft volume.
Introducing	• Respond to various texture solids. • Explore liquids. • Respond mixtures of solid substances. • Explore how moving objects exhibit different types of motion. • Explore the function of magnets. • Respond to sound/vibrations.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standards	Alternate Content Standards
2.L.1.1. Classify plants according to similarities and differences.	2.A.L.1.1. Recognize different shapes of leaves.
2.L.1.2. Classify people and animals according to similarities and differences.	2.A.L.1.2. Recognize animals according to similarities.

Indicator 2: Analyze various patterns of inheritance and biological change.

General Education Standards	Alternate Content Standards
2.L.2.1. Describe how flowering plants go through a series of orderly changes in their life cycle.	2.A.L.2.1. Recognize a basic life cycle of a plant.
2.L.2.2. Compare life cycles of various living things.	2.A.L.2.2. Recognize a life cycle of an animal.

Indicator 3: Analyze how organisms are linked to one another and the environment.

General Education Standards	Alternate Content Standards
2.L.3.1 Describe ways that plants and animals depend on each other.	2.A.L.3.1. Recognize animals that depend on plants for food.
2.L.3.2 Associate adaptations in plants and animals in response to seasonal changes.	2.A.L.3.2. Recognize an animal that adapts to a seasonal change by hibernation.
2.L.3.3 Recognize what it means for a species to be extinct or endangered.	2.A.L.3.3. Recognize an extinct species.

South Dakota 2nd Grade Extended Life Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Identify leaves according to the shape of the leaves. • Identify three types of animals according to similarities. • Label the basic life cycle of a plant. • Label the different stages of an animal's life cycle. • Identify animals that eat plants. • Identify an animal that hibernates. • Label that a species no longer exists.

Applying	• Recognize different shapes of leaves. • Recognize animals according to similarities. • Recognize a basic life cycle of a plant. • Recognize a life cycle of an animal. • Recognize animals that depend on plants for food. • Recognize an animal that adapts to a seasonal change by hibernation. • Recognize an extinct species.
Developing	• Explore different shapes of leaves. • Explore similar types of animals. • Explore the basic life cycle of a plant. • Explore a life cycle of an animal • Explore animals that depend on plants for food. • Explore animals that hibernate. • Explore pictures of extinct species.
Introducing	• Respond to different shapes of leaves. • Respond to animals. • Respond to the different stages of a plant life cycle. • Respond to a life cycle of an animal. • Respond to illustrations of animals that depend on plants for food. • Respond to the concept of hibernation. • Respond to illustrations/media of extinct species.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standards	Alternate Content Standards
2.E.1.1. Describe types and patterns of weather during different seasons.	2.A.E.1.1 Recognize different types of weather.
2.E.1.2. Identify and locate geological features using maps and globes.	2.A.E.1.2 Recognize different geological features on maps.

2.E.1.3. Recognize and distinguish between forms of water in the Earth system.	2.A.E.1.3 Recognize lakes and rivers.

South Dakota 2nd Grade Earth/Space Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Identify different types of weather. • Label two different geological features on maps • Recognize a lake or a river on a map.
Applying	• Recognize different types of weather. • Recognize different geological features on maps. • Recognize lakes and rivers.
Developing	• Explore different types of weather. • Explore differences of two geological features • Explore a lake and river.
Introducing	• Respond to different types of weather. • Explore geological features on maps. • Respond to a presentation about a lake and river.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY STANDARDS

Goal 5: Students will identify and evaluate the relationship and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

Note: Mastery is not expected at this grade level.

Indicator 2: Analyze the relationship/interactions among science, technology, environment, and society.

Note: Mastery is not expected at this grade level.

3rd GRADE SCIENCE ALTERNATE CONTENT STANDARDS

Nature of Science Standards

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at this grade level.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Note: Mastery is not expected at this grade level.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standards	Alternate Content Standards
3.P.1.1. Describe physical properties of matter using the senses (touch, smell, etc.).	3.A.P.1.1. Identify physical properties of matter using the senses (touch, smell, etc.).
3.P.1.2. Use tools to relate composition to physical properties.	3.A.P.1.2. Use tools to recognize the makeup of matter.
3.P.1.3 Demonstrate how a different substance can be made by combining two or more substances.	3.A.P.1.3. Demonstrate how a different substance can be made by combining two substances.

Indicator 3: Analyze interactions of energy and matter.

General Education Standards	Alternate Content Standards
3.P.3.1 Define energy and differentiate between sources of renewable and non-renewable energy.	3.A.P.3.1. Identify sources of renewable and non-renewable energy.
3.P.3.2 Demonstrate how sound consists of vibrations and pitch.	3.A.P.3.2. Recognize that sound consists of vibrations and pitch.
3.P.3.3 Identify how sound is used as a means of communication.	3.A.P.3.3. Identify that sound is used as a means of communication.

South Dakota 3rd Grade Physical Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Differentiate between physical properties of matter using the senses (touch, smell, etc.). • Use a variety of tools to observe the makeup and changes of matter. • Demonstrate how a different substance can be made by combining two or more substances. • Differentiate between sources of renewable and non-renewable energy. • Demonstrate how sound consists of vibrations and pitch. • Identify how sound is used as a means of communication.
Applying	• Identify physical properties of matter using the senses (touch, smell, etc.). • Use tools to recognize the makeup of matter. • Demonstrate how a different substance can be made by combining two substances. • Identify sources of renewable and non-renewable energy. • Recognize that sound consists of vibrations and pitch. • Identify that sound is used as a means of communication.
Developing	• Recognize physical properties of matter using the senses (touch, smell, etc.). • Use tools to explore matter. • Combine substances. • Recognize sources of energy. • Distinguish between vibrations and pitch. • Identify various sounds.
Introducing	• Respond to physical properties of matter using the senses (touch, smell, etc.). • Explore the use of tools. • Demonstrate responses to different mixtures. • Respond to sources of energy. • Respond to loud and soft sounds. • Respond to various sounds.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standards	Alternate Content Standards
3.L.1.1. Identify the basic structures, functions, and needs of plants in relation to their environment.	3.A.L.1.1. Identify the basic needs of plants.
3.L.1.2. Identify characteristic features of animals and their related functions in relation to their environment.	3.A.L.1.2. Identify characteristics of animals.
3.L.1.3. Describe life cycles, including growth and metamorphosis, of familiar organisms.	3.A.L.1.3. Recognize various life cycles.

Indicator 2: Analyze various patterns of inheritance and biological change.

General Education Standards	Alternate Content Standards
3.L.2.1. Explain how animals instinctively meet basic needs in their environment.	3.A.L.2.1. Identify the basic needs of animals.

Indicator 3: Analyze how organisms are linked to one another and the environment.

General Education Standards	Alternate Content Standards
3.L.3.1. Describe how species depend on one another and on the environment for survival.	3.A.L.3.1. Identify a specific relationship between a plant and animal.
3.L.3.2. Explain how environments support a diversity of plants and animals.	3.A.L.3.2. Recognize different environments.
3.L.3.3. Describe ways humans impact air, water, and habitat quality.	3.A.L.3.3. Recognize a way that people affect the environment.
3.L.3.4. Examine fossils and describe how they provide evidence of change in organisms.	3.A.L.3.4. Recognize a fossil.

South Dakota 3rd Grade Life Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Identify basic structures and needs of plants. • Recognize the purpose of an animal's feature in the environment. • Demonstrate parts of a life cycle. • Recognize how a specific animal adapts to the environment. • Describe how plants and animals need each other. • Identify different environments. • Recognize more than one way that people affect the environment. • Identify a fossil.
Applying	• Identify the basic needs of plants. • Identify characteristics of animals. • Recognize various life cycles. • Identify the basic needs of animals. • Identify a specific relationship between a plant and animal. • Recognize different environments. • Recognize a way that people affect the environment. • Recognize a fossil.
Developing	• Recognize the basic needs of plants. • Recognize characteristics of animals. • Recognize a life cycle. • Recognize the basic needs of animals. • Recognize a specific relationship between a plant and animal. • Recognize an environment. • Explore how people affect the environment. • Explore fossils.
Introducing	• Explore plants. • Explore characteristic features of animals. • Explore a life cycle. • Explore the basic needs of animals. • Explore relationships between plants and animals. • Explore an environment. • Respond to pictures/activities that reflect how people affect the environment. • Manipulate fossils.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standards	Alternate Content Standards
3.E.1.1. Define the difference between a rock and a mineral.	3.A.E.1.1. Identify physical properties of rocks.
3.E.1.2. Describe how humans use Earth's natural resources.	3.A.E.1.2. Recognize two natural resources.

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

General Education Standards	Alternate Content Standards
3.E.2.1. Identify the Earth as one of the planets that orbit the Sun.	3.A.E.2.1. Recognize Earth as the planet upon which they live.
3.E.2.2. Recognize changes in the appearance of the Moon over time.	3.A.E.2.2. Recognize two phases of the moon.

South Dakota 3rd Grade Earth/Space Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Describe physical properties of rocks. • Recognize three natural resources that people use. • Recognize the location of the Sun and Earth. • Identify three phases of the moon.
Applying	• Identify physical properties of rocks. • Recognize two natural resources. • Recognize Earth as the planet upon which they live. • Recognize two phases of the moon.
Developing	• Explore physical properties of rocks. • Recognize one natural resource. • Recognize Earth. • Recognize the moon.
Introducing	• Respond to physical properties of rocks. • Participate in activities involving natural resources. • Respond to visual presentation of Earth. • Respond to the moon through various visual aids.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.

3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Science, Technology, Environment, and Society

Goal 5: Students will identify and evaluate the relationships and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

General Education Standards	Alternate Content Standards
3.S.1.1. Recognize ways to recycle, reuse, and reduce consumption of natural resources.	3.A.S.1.1. Recognize items to recycle.

Indicator 2: Analyze the relationship/interactions among science, technology, environment, and society.

Note: Mastery is not expected at this grade level.

South Dakota 3rd Grade Extended Science, Technology, Environment, and Society Achievement Descriptors

Levels	Descriptors
Advancing	• Recognize items that can be recycled and reused.
Applying	• Recognize items to recycle.
Developing	• Recognize the symbols for recycling.
Introducing	• Able to recycle.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

4th Grade SCIENCE ALTERNATE CONTENT STANDARDS

Nature of Science Standards

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at this grade level.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Note: Mastery is not expected at this grade level.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standards	Alternate Content Standards
4.P.1.1. Describe observable physical changes and properties in matter.	4.A.P.1.1. Recognize the stages of matter.
4.P.1.2. Explain how some physical properties remain the same as the mass is changed.	4.A.P.1.2. Recognize the physical characteristics that remain the same as the size is changed.
4.P.1.3. Differentiate between the states of matter caused by changes in temperature using water.	4.A.P.1.3. Recognize two states of water.

Indicator 2: Analyze forces, their forms, and their effects on motions.

General Education Standards	Alternate Content Standards
4.P.2.1. Demonstrate how forces act over a distance.	4.A.P.2.1. Identify forces.

Indicator 3: Analyze interactions of energy and matter.

General Education Standards	Alternate Content Standards
4.P.3.1. Identify materials as being conductors or insulators of electricity.	4.A.P.3.1. Identify conductors and insulators of electricity.

4.P.3.2. Construct and define a simple circuit.	4.A.P.3.2. Recognize a simple circuit.
4.P.3.3. Use magnets, electromagnets, magnetic fields, and compasses to explore magnetic energy.	4.A.P.3.3. Use magnets to demonstrate attraction and repulsion.

South Dakota 4th Grade Physical Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Describe the stages of matter. • Identify the physical characteristics that remain the same as the size is changed. • Recognize three states of water. • Demonstrate forces. • Distinguish between conductors or insulators of electricity. • Identify a simple circuit. • Recognize the capabilities of magnets.
Applying	• Recognize the stages of matter. • Recognize the physical characteristics that remain the same as the size is changed. • Recognize two states of water. • Identify forces. • Identify conductors and insulators of electricity. • Recognize a simple circuit. • Use magnets to demonstrate attraction and repulsion.
Developing	• Observe the stages of matter. • Discriminate the physical characteristics of an item that has changed in size. • Recognize one state of water. • Recognize forces. • Recognize conductors and insulators of electricity. • Recognize some parts of a simple circuit. • Use magnets to demonstrate items that attract.
Introducing	• Explore the stages of matter. • Explore physical characteristics as objects change in size. • Explore the different states of water. • Explore how forces act. • Participate in experiments with conductors or insulators of electricity. • Participate in experiments that demonstrate a simple circuit. • Explore the force of magnets with teacher supervision.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.

3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standards	Alternate Content Standards
4.L.1.1. Identify the basic systems (digestive, skeletal, muscular, nervous, respiratory, and circulatory) and major organs.	4.A.L.1.1. Recognize various parts of the skeletal system.
4.L.1.2. Differentiate between vertebrates and invertebrates, and classify the five groups of vertebrates (mammal, reptile, amphibian, bird, and fish) based on characteristics.	4.A.L.1.2. Recognize some animals have backbones.

Indicator 2: Analyze various patterns of inheritance and biological change.

General Education Standards	Alternate Content Standards
4.L.2.1. Identify behavioral and structural adaptations that allow a plant or animal to survive in a particular environment.	4.A.L.2.1. Recognize animals that change to survive in a particular environment.
4.L.2.2. Explain how a size of a population is dependent upon the available resources within its community.	4.A.L.2.2. Identify a resource needed to support a community.

Indicator 3: Analyze how organisms are linked to one another and the environment.

General Education Standards	Alternate Content Standards
4.L.3.1. Describe the flow of energy through food chains and webs.	4.A.L.3.1. Recognize a basic food chain.

South Dakota 4th Grade Life Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Identify various parts of the skeletal system. • Recognize some animals do not have backbones. • Identify animals that change to survive in a particular environment. • Identify resources needed to support their community. • Recognize the major parts of a food chain.
Applying	• Recognize various parts of the skeletal system. • Recognize some animals have backbones. • Recognize animals that change to survive in a particular environment. • Identify a resource needed to support a community. • Recognize parts of a basic food chain.
Developing	• Recognize that the body is made of bones. • Recognize animals have bones. • Explore animals that change to survive in a particular environment. • Recognize resources in a community. • Explores basic food chains.
Introducing	• Explore that the body is made of bones. • Explore animals with bones. • Respond to animals that change to survive in a particular environment. • Explore resources in the community. • Respond to a presentation of a food chain.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standards	Alternate Content Standards
4.E.1.1. Describe the basic stages of the water cycle.	4.A.E.1.1. Identify different ways precipitation can occur within the water cycle.

4.E.1.2. Describe how weather conditions and phenomena occur and can be predicted.	4.A.E.1.2. Recognize the current weather condition.

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

General Education Standards	Alternate Content Standards
4.E.2.1. Describe the motions of Earth, Sun, and Moon.	4.A.E.2.1. Identify a globe.

South Dakota 4th Grade Earth/Space Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Describe different ways precipitation can occur within the water cycle. • Identify the current weather condition. • Recognize the rotation of a globe.
Applying	• Identify different ways precipitation can occur within the water cycle. • Recognize the current weather condition. • Identify a globe.
Developing	• Recognize different ways precipitation can occur within the water cycle. • Recognize illustrations of the current weather condition. • Recognize a globe.
Introducing	• Respond to a presentation depicting ways precipitation can occur within the water cycle. • Respond to a question related to the current weather condition. • Respond to representations of the globe.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Science, Technology, Environment, and Society

Goal 5: Students will identify and evaluate the relationships and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

General Education Standards	Alternate Content Standards
4.S.1.1. Describe how people continue to invent new ways of doing things, solving problems, and getting work done.	4.A.S.1.1. Recognize three versions of a particular invention.
4.S.1.2. Explain how new ideas and inventions often affect people.	4.A.S.1.2. Identify a benefit of a new invention.

Indicator 2: Analyze the relationship/interactions among science, technology, environment, and society.

Note: Mastery is not expected at this grade level.

South Dakota 4th Grade Science, Technology, Environment, and Society
Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Recognize the progression of a particular invention. • Identify how a new invention affected his/her life.
Applying	• Recognize three versions of a particular invention. • Identify a benefit of a new invention.
Developing	• Recognize two versions of a particular invention. • Recognize an invention that has benefited people.
Introducing	• Respond to different versions of inventions. • Respond to illustrations of inventions that have benefited people.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

5th GRADE SCIENCE ALTERNATE CONTENT STANDARDS

Nature of Science Standards

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at this grade level.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Note: Mastery is not expected at this grade level.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standards	Alternate Content Standards
5.P.1.1. Define matter on the basis of observable physical properties.	5.A.P.1.1. Recognize that matter has weight.

Indicator 2: Analyze forces, their forms, and their effects on motions.

General Education Standards	Alternate Content Standards
5.P.2.1. Identify forces in specific situations that require objects to interact, change directions, or stop.	5.A.P.2.1. Identify how objects stop.
5.P.2.2. Analyze the structure and design of simple and compound machines to determine how the machines make work easier by trading force for distance.	5.A.P.2.2. Recognize that simple machines exist.

Indicator 3: Analyze interactions of energy and matter.

General Education Standards	Alternate Content Standards
5.P.3.1. Demonstrate and explain how to measure heat flow into an object.	5.A.P.3.1. Recognize how a thermometer works.

5.P.3.2. Describe the Sun's ability to produce energy in the forms of light and heat.	5.A.P.3.2. Manipulate tools to adjust the amount of light.
5.P.3.3. Describe basic properties of light.	5.A.P.3.3. Label the colors found in the spectrum of light.

South Dakota 5th Grade Physical Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Compare weight. • Demonstrate how objects stop. • Label a simple machine. • Use a thermometer. • Identify that the sun produces light and heat. • Recognize that the spectrum of light contains colors.
Applying	• Recognize that matter has weight. • Identify how objects stop. • Recognize that simple machines exist. • Recognize how a thermometer works. • Manipulate tools to adjust the amount of light. • Label the colors found in the spectrum of light.
Developing	• Utilize a balance scale. • Distinguish how objects move on different surfaces. • Locate a simple machine. • Locate a thermometer. • Identify that the sun produces light. • Recognize the colors found in the spectrum of light.
Introducing	• Respond to various weights. • Respond to different textures. • Explore simple machines. • Demonstrate a response to hot and cold. • Respond to the sun. • Respond to colors.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standards	Alternate Content Standards
5.L.1.1. Describe the basic process of photosynthesis and the role of light as a source of energy in plants.	5.A.L.1.1. Recognize that plants need food.

Indicator 2: Analyze various patterns of inheritance and biological change.

General Education Standards	Alternate Content Standards
5.L.2.1. Predict physical characteristics with family lineage.	5.A.L.2.1. Identify pictures of offspring and their parents.
5.L.2.2. Describe structures and processes involved in plant reproduction.	5.A.L.2.2. Identify basic parts of a plant.

Indicator 3: Analyze how organisms are linked to one another and the environment.

General Education Standards	Alternate Content Standards
5.L.3.1. Describe how natural events and/or human influences may help or harm ecosystems.	5.A.L.3.1. Identify that animals rely on plants to survive in the ecosystem.
5.L.3.2. Using an energy pyramid model, analyze the roles of organisms to determine the transfer of energy.	5.A.L.3.2. Recognize that living things rely on each other within the energy pyramid.
5.L.3.3. Describe how interrelationships enable some organisms to survive.	5.A.L.3.3. Recognize how humans react to seasonal changes.

South Dakota 5th Grade Life Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Identify a diagram to show how plants get food. • Recognize that offspring resemble their parents. • Identify structures involved in plant reproduction. • Identify parts of an ecosystem. • Identify an energy pyramid. • Recognize how living things react to seasonal changes.

Applying	• Recognize that plants need food. • Identify pictures of offspring and their parents. • Identify basic parts of a plant. • Identify that animals rely on plants to survive in the ecosystem. • Recognize that living things rely on each other within the energy pyramid. • Recognize how humans react to seasonal changes.
Developing	• Identify a plant. • Recognize identical physical characteristics of offspring and their parents by visual aids. • Recognize the basic parts of a plant. • Recognize the components of the ecosystem. • Identify components within the energy pyramid. • Identify items related to a season.
Introducing	• Explore visual and or tactile aids of plants. • Respond to illustrations of parents and their offspring. • Explore basic parts of a plant. • Attend to stimuli of ecosystems. • Explore various components of the energy pyramid. • Explore items related to seasons.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standards	Alternate Content Standards
5.E.1.1. Describe the basic structure of Earth's interior.	5.A.E.1.1. Identify the crust and mantle of the earth.

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

General Education Standards	Alternate Content Standards
5.E.2.1. Describe the components (Sun, planets and moons) of the solar system.	5.A.E.2.1. Locate three planets of the solar system.
5.E.2.2. Explain how the Earth's rotation affects the appearance of the sky.	5.A.E.2.2. Recognize that the earth's rotation creates day and night.

South Dakota 5th Grade Earth/Space Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Identify the crust, mantle, and core of the earth. • Locate five planets of the solar system. • Describe what causes day and night on Earth.
Applying	• Identify the crust and mantle of the earth. • Locate three planets of the solar system. • Recognize that the earth's rotation creates day and night.
Developing	• Recognize images of the crust and mantle of the earth. • Locate the sun, moon, and Earth. • Recognize that the earth is constantly spinning.
Introducing	• Explore the earth's crust. • Show a response to the sun, moon, and Earth. • Engage an object in a spinning motion.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Science, Technology, Environment, and Society

Goal 5: Students will identify and evaluate the relationships and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

General Education Standards	Alternate Content Standards
5.S.1.1. Identify scientific changes that have affected transportation, health, sanitation, and communication.	5.A.S.1.1. Identify one mode of modern transportation.

5.S.1.2. Describe how designing a solution may have constraints.	5.A.S.1.2. Indicate that a problem exists.

Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.

General Education Standards	Alternate Content Standards
5.S.2.1. Explain the interrelationship of populations, resources, and environments.	5.A.S.2.1. Identify an animal with its specific habitat.

South Dakota 5th Grade Science, Technology, Environment, and Society
Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Identify that there is more than one mode of modern transportation. • Recognize that scientific problems exist. • Identify different animal wildlife habitats.
Applying	• Identify one mode of modern transportation. • Indicate that a problem exists. • Identify an animal with its specific habitat.
Developing	• Recognize modes of modern transportation • Identify a problem from stimuli. • Recognize an animal to its specific habitat.
Introducing	• Explore modes of modern transportation. • Engage in an activity that identifies problems. • Explore wildlife.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

6th GRADE SCIENCE ALTERNATE CONTENT STANDARDS

Nature of Science

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at this grade level.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

General Education Standards	Alternate Content Standards
6.N.2.1 Pose questions that can be explored through scientific investigations.	6.A.N.2.1. Answer a yes/no question about a supervised science experiment.

South Dakota 6th Grade Nature of Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Answer one question about a supervised science experiment.
Applying	• Answer a yes/no question about a supervised science experiment.
Developing	• Participate in simple supervised science experiments.
Introducing	• Observe science experiments.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standards	Alternate Content Standards
6.P.1.1. Identify the subatomic particles that make up atoms.	6.A.P.1.1. Label the proton(s) in an atom.

6.P.1.2. Classify matter based on physical and chemical properties.	6.A.P.1.2. Identify physical properties.
6.P.1.3. Describe phase changes in matter differentiating between the particle motion in solids, liquids, and gases.	6.A.P.1.3. Identify solids, liquids, and gases.

Indicator 2: Analyze forces, their forms, and their effects on motions.

General Education Standards	Alternate Content Standards
6.P.2.1. Describe how push/pull forces acting on an object produce motion.	6.A.P.2.1 Demonstrate push/pull forces.

Indicator 3: Analyze interactions of energy and matter.

General Education Standards	Alternate Content Standards
6.P.3.1. Identify types of energy transformations.	6.A.P.3.1 Recognize potential and kinetic energy.

South Dakota 6th Grade Physical Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Label the proton(s) and neutron(s) in an atom. • Classify physical properties. • Describe solids, liquids, and gases. • Describe push/pull forces. • Demonstrate potential and kinetic energy.
Applying	• Label the proton(s) in an atom. • Identify physical properties. • Identify solids, liquids, and gases. • Demonstrate push/pull forces. • Recognize potential and kinetic energy.
Developing	• Identify an atom. • Indicate a physical property. • Distinguish solids and liquids. • Model push/pull forces. • Recognize kinetic energy.
Introducing	• Respond to the parts of an atom. • Respond to the physical properties of color or texture. • Respond to solids and liquids. • Respond to push/pull. • Experience kinetic energy.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.

3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standards	Alternate Content Standards
6.L.1.1. Illustrate the difference between plant and animal cells.	6.A.L.1.1. Identify a cell.
6.L.1.2. Explain the importance and scientific use of a classification system.	6.A.L.1.2. Classify an organism as a plant or animal.

South Dakota 6th Grade Life Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Recognize an animal and a plant cell. • Recognize the names of the five kingdoms.
Applying	• Identify a cell. • Classify an organism as a plant or animal.
Developing	• Recognize a cell. • Explore with their senses an organism as a plant or animal
Introducing	• Give a recognizable response to an illustration of a cell. • Respond to representations of plants and animals.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standards	Alternate Content Standards
6.E.1.1. Describe how the spheres (lithosphere, hydrosphere, atmosphere, and biosphere) of the Earth interact.	6.A.E.1.1. Identify three spheres of the Earth.
6.E.1.2. Examine the role of water on the Earth.	6.A.E.1.2. Identify an effect of water on the surface of the Earth.
6.E.1.3. Explain processes involved in the formation of the Earth's structure.	6.A.E.1.3. Identify the effects of volcanoes and earthquakes.

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

General Education Standards	Alternate Content Standards
6.E.2.1. Identify the organization and relative scale of the solar system.	6.A.E.2.1. Label the nine planets in the solar system.

South Dakota 6th Grade Earth/Space Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Classify three spheres of the Earth. • Describe an effect of water on the surface of the Earth. • Describe the effects of volcanoes and earthquakes. • Sequence and identify the Sun, Mercury, Venus, Earth and Mars.
Applying	• Identify three spheres of the Earth. • Identify an effect of water on the surface of the Earth. • Identify the effects of volcanoes and earthquakes. • Label the nine planets in the solar system.
Developing	• Recognize there are different spheres of the Earth. • Recognize an effect of water on the surface of the Earth. • Recognize volcanoes and earthquakes. • Recognize the planets in the solar system.
Introducing	• Attend to a presentation about the spheres of the Earth. • Attend to a presentation on the effects of water on the surface of the Earth. • Attend to a presentation of the effects of volcanoes and earthquakes. • Explore models of the planets using multi-sensory methods.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Science, Technology, Environment, and Society

Goal 5: Students will identify and evaluate the relationships and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

General Education Standards	Alternate Content Standards
6.S.1.1. Describe how science and technology have helped society to solve problems.	6.A.S.1.1. Recognize that technology helps solve problems.

Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.

General Education Standards	Alternate Content Standards
6.S.2.1. Given a scenario, identify the problem(s) of human activity on the local, regional, or global environment.	6.A.S.2.1. Give an example of a problem caused by human activity.

South Dakota 6th Grade Science, Technology, Environment, and Society Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Identify a problem that is solved by using technology. • Solve a problem caused by human activity.
Applying	• Recognize that technology helps solve problems. • Give an example of a problem caused by human activity.
Developing	• Recognize technology in their environment. • Identify a problem caused by human activity.
Introducing	• Use assistive technology. • Attend to presentation on the effects of problems caused by human activity.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

7th GRADE SCIENCE ALTERNATE CONTENT STANDARDS

Nature of Science

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at this grade level.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

General Education Standards	Alternate Content Standards
7.N.2.1. Conduct scientific investigations using given procedures.	7.A.N.2.1. Participate in and observe science activities and experiments.

South Dakota 7th Grade Nature of Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Conduct a science experiment.
Applying	• Participate in and observe science activities and experiments.
Developing	• Imitate science activities and experiments.
Introducing	• Observe science activities and experiments.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Note: Grade seven standards emphasize Life Science. Physical Science mastery is not expected at this grade level.

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standards	Alternate Content Standards
7.L.1.1. Identify basic cell organelles and their functions.	7.A.L.1.1. Locate a cell part.
7.L.1.2. Identify and explain the function of the human systems and the organs within each system.	7.A.L.1.2. Recognize that the human body has systems.
7.L.1.3. Classify organisms by using the currently recognized kingdoms.	7.A.L.1.3. Distinguish between plants, animals and fungi.
7.L.1.4. Describe and identify the structure of vascular and non-vascular plants.	7.A.L.1.4. Locate the parts of a vascular plant.

Indicator 2: Analyze various patterns and products of natural and induced biological change.

General Education Standards	Alternate Content Standards
7.L.2.1. Distinguish between processes involved in sexual and asexual reproduction.	7.A.L.2.1. Recognize the continuation of mammals through sexual reproduction.

Indicator 3: Analyze how organisms are linked to one another and the environment.

General Education Standards	Alternate Content Standards
7.L.3.1. Predict the effects of biotic and abiotic factors on a species' survival.	7.A.L.3.1. List factors needed for survival of a species.

South Dakota 7th Grade Life Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Identify basic cell parts. • Identify the muscular system. • Label the names of the five kingdoms. • Label parts of a flowering vascular plant. • Recognize the continuation of a species through sexual reproduction. • Identify factors needed for survival of a species.
Applying	• Locate a cell part. • Recognize that the human body has systems. • Distinguish between plants, animals and fungi. • Locate the parts of a vascular plant. • Recognize the continuation of mammals through sexual reproduction. • List factors needed for survival of a species.

Developing	• Recognize that cells have parts. • Recognize that the body has different parts. • Recognize an organism as a plant or animal. • Recognize the parts of a vascular plant. • Recognize that there are physical differences between males and females. • Recognize basic factors needed for the survival of a species.
Introducing	• Attend to presentations of cell parts. • Demonstrate recognition of body parts. • Recognize an organism. • Explore the parts of a vascular plant. • Respond to information related to the physical differences between males and females. • Respond to a presentation of the basic factors needed for survival of a species.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Note: Grade seven standards emphasize Life Science. Earth/Space Science mastery is not expected at this grade level.

Science, Technology, Environment, and Society

Goal 5: Students will identify and evaluate the relationships and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

General Education Standards	Alternate Content Standards
7.S.1.1. Describe how science and technology are used to solve problems in different professions and businesses.	7.A.S.1.1. Locate situations in which science and technology are used to solve problems at home and/or school.

Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.

General Education Standards	Alternate Content Standards
7.S.2.1. Given a scenario, predict the consequence(s) of human activity on the local, regional, or global environment.	7.A.S.2.1. Recognize a consequence of human activity in school.

South Dakota 7th Grade Science, Technology, Environment, and Society
Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Explain a situation in which science and technology are used to solve problems at home and/or school. • Recognize consequences of human activity in a local environment.
Applying	• Locate situations in which science and technology are used to solve problems at home and/or school. • Recognize a consequence of human activity in school.
Developing	• Locate one situation in which science and technology are used to solve problems at home and/or school. • Recognize consequences of human activity in their personal environment.
Introducing	• Experience situations in which science and technology are used to solve problems at school. • Respond to human activity in a local environment.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

8th GRADE SCIENCE ALTERNATE CONTENT STANDARDS

Nature of Science

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge

General Education Standards	Alternate Content Standards
8.N.1.1. Differentiate among facts, predictions, theory, and laws/principles in scientific investigations.	8.A.N.1.1. Distinguish between fact and prediction in scientific investigations.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

General Education Standards	Alternate Content Standards
8.N.2.1. Design a replicable scientific investigation.	8.A.N.2.1. Participate in a systematic scientific investigation.

South Dakota 8th Grade Nature of Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Compare fact and prediction in scientific investigations. • Follow instructions with prompts to conduct a systematic scientific investigation.
Applying	• Distinguish between fact and prediction in scientific investigations. • Participate in a systematic scientific investigation.
Developing	• Recognize a fact in scientific investigations. • Follow simple instructions of a systematic scientific investigation.
Introducing	• Attend to facts and predictions. • Attend to a demonstration of a systematic scientific investigation.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standards	Alternate Content Standards
8.P.1.1. Classify matter as elements, compounds, or mixtures.	8.A.P.1.1. Recognize mixtures.
8.P.1.2. Use the Periodic Table to compare and contrast families of elements and to classify elements as metals, metalloids, or non-metals.	8.A.P.1.2. Use the Periodic Table to identify the first eight elements.
8.P.1.3. Compare properties of matter resulting from physical and chemical changes.	8.A.P.1.3 . Recognize that matter changes.

South Dakota 8th Grade Physical Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Demonstrate how mixtures are made. • Use the Periodic Table to identify the first 18 elements. • Explain why matter changes.
Applying	• Recognize mixtures. • Use the Periodic Table to identify the first 8 elements. • Recognize that matter changes.
Developing	• Select mixtures. • Use color coded cards to identify elements. • Observe matter.
Introducing	• Explore mixtures. • Attend to the activities about the Periodic Table. • Introduced to different forms of matter.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Note: Grade eight standards emphasize Earth/Space Science. Life Science mastery is not expected at this grade level.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standards	Alternate Content Standards
8.E.1.1. Identify and classify minerals and rocks.	8.A.E.1.1. Identify rocks.
8.E.1.2. Explain the role of plate tectonics in shaping Earth.	8.A.E.1.2. Recognize the major tectonic plates.
8.E.1.3. Explain the factors that create weather and the instruments and technologies that assess it.	8.A.E.1.3. Label factors that create weather.
8.E.1.4. Examine the chemical and physical properties of the ocean to determine causes and effects of currents and waves.	8.A.E.1.4. Identify effects of currents and waves in the ocean.
8.E.1.5. Explain the impact of weathering and erosion on the Earth.	8.A.E.1.5. Recognize the differences between weathering and erosion.

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

General Education Standards	Alternate Content Standards
8.E.2.1. Compare celestial bodies within the solar system using composition, size, and orbital motion.	8.A.E.2.1. Compare the planets of our solar system according to size.
8.E.2.2. Differentiate the influences of the relative positions of the Earth, Moon, and Sun.	8.A.E.2.2. Recognize how the tilt of the Earth is the cause of winter and summer.

South Dakota 8th Grade Earth/Space Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Distinguish between rocks. • Identify major tectonic plates. • List factors that create weather. • Classify effects of currents and waves in the ocean. • Identify the differences between weathering and erosion. • Sequence order of the planets according to size. • Explain how the tilt of the Earth is the cause of the seasons.
Applying	• Identify rocks. • Recognize the major tectonic plates. • Label factors that create weather. • Identify effects of currents and waves in the ocean. • Recognize the differences between weathering and erosion. • Compare the planets of our solar system according to size. • Recognize how the tilt of the Earth is the cause of winter and summer.
Developing	• Explore different textures of rocks. • Recognize the Earth's crust is made up of plates. • Indicate current weather conditions. • Recognize bodies of water have waves • Identify erosion. • State the solar system is made up of planets. • Identify the four seasons.
Introducing	• Manipulate different rocks. • Explore the different plates of the Earth. • Experience different weather conditions. • Explore waves. • Manipulate objects that have been eroded. • Attend to the concept of planets. • Explore conditions of the different seasons.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Science, Technology, Environment, and Society

Goal 5: Students will identify and evaluate the relationships and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

General Education Standards	Alternate Content Standards
8.S.1.1. Describe how science and technology have been influenced by social needs, attitudes, and values.	8.A.S.1.1. Identify that science has been influenced by social needs.

Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.

General Education Standards	Alternate Content Standards
8.S.2.1. Given a scenario, offer solutions to problems created by human activity on the local, regional, or global environment.	8.A.S.2.1. Recognize problems/solutions created by humans.

South Dakota 8th Grade Science, Technology, Environment, and Society
Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Given a discovery, explain how it meets the needs of society. • Identify problems created by humans in the local environment.
Applying	• Identify that science has been influenced by social needs. • Recognize problems/solutions created by humans.
Developing	• Recognize social needs. • Recognize problems.
Introducing	• Attend to activities that involve objects that meet their social needs. • Attend to problems.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

HIGH SCHOOL SCIENCE ALTERNATE CONTENT STANDARDS

Nature of Science

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

General Education Standards	Alternate Content Standards
9-12.N.1.1. Evaluate a scientific discovery to determine and describe how societal, cultural, and personal beliefs influence scientific investigations and interpretations.	9-12.A.N.1.1. Identify a scientific discovery.
9-12.N.1.2. Describe the role of observation and evidence in the development and modification of hypotheses, theories, and laws.	9-12.A.N.1.2. Describe a hypothesis.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

General Education Standards	Alternate Content Standards
9-12.N.2.1. Apply science process skills to design and conduct student investigations.	9-12.A.N.2.1. Develop a scientific investigation with supervision.
9-12.N.2.2. Practice safe and effective laboratory techniques.	9-12.A.N.2.2. Practice safe laboratory techniques.

South Dakota 9-12 Nature of Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Identify a scientific discovery and recognize the discovery to everyday life. • State and test a hypothesis. • Follow the process of scientific investigation. • Practice safe and effective laboratory techniques.
Applying	• Identify a scientific discovery. • Describe a hypothesis. • Develop a scientific investigation with supervision. • Practice safe laboratory techniques.
Developing	• Recognize scientific discoveries. • Recognize a problem. • Participate in simple scientific experiments. • Recognize simple safety equipment.

Introducing	• Observe scientific discoveries. • Experience cause and effect situations. • Observe a simple scientific experiment. • Observe safe laboratory techniques.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standards	Alternate Content Standards
9-12.P.1.1. Use the Periodic Table to determine the atomic structure of elements, valence number, family relationships, and regions (metals, nonmetals, and metalloids).	9-12.A.P.1.1. Compare elements of the Periodic Table.
9-12.P.1.2. Describe ways that atoms combine.	9-12.A.P.1.2. Construct models of atoms and compounds.
9-12.P.1.3. Predict whether reactions will speed up or slow down as conditions change.	9-12.A.P.1.3. Recognize the difference between a chemical and physical change.
9-12.P.1.4. Balance chemical equations by applying the Law of Conservation of Matter.	9-12.A.P.1.4. Demonstrate knowledge of the Law of Conservation of Matter.
9-12.P.1.5. Distinguish among chemical, physical, and nuclear changes.	9-12.A.P.1.5. Identify chemical and physical changes.

Indicator 2: Analyze forces, their forms, and their effects on motions.

General Education Standards	Alternate Content Standards
9-12.P.2.1. Apply concepts of distance and time to the quantitative relationships of motion using appropriate mathematical formulas, equations, and units.	9-12.A.P.2.1. Demonstrate an understanding of speed.
9-12.P.2.2. Predict motion of an object using Newton's Laws.	9-12.A.P.2.2. Predict motion.

9-12.P.2.3. Relate concepts of force, distance, and time to the quantitative relationships of work, energy, and power.	9-12.A.P.2.3. Relate energy to work.

Indicator 3: Analyze interactions of energy and matter.

General Education Standards	Alternate Content Standards
9-12.P.3.1. Describe the relationships among potential energy, kinetic energy, and work as applied to the Law of Conservation of Energy.	9-12.A.P.3.1. Differentiate between forms of energy.
9-12.P.3.2. Describe how characteristics of waves are related to one another.	9-12.A.P.3.2. Describe characteristics of waves.
9-12.P.3.3. Describe electrical effects in terms of motion and concentrations of charged particles.	9-12.A.P.3.3. Observe and discuss electrical circuit.

South Dakota 9-12 Physical Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Use the Periodic Table to recognize the properties of the elements. • Recognize atoms combine in different ways. • Recognize that changes in conditions will affect reaction rates. • Balance previously written equations. • Explain whether a physical or chemical change has occurred. • Calculate speed. • Explain the causes of motion. • Demonstrate an understanding of work, energy and power. • Demonstrate changes in energy. • Recognize different parts of the waves. • Demonstrate electrical circuits.
Applying	• Compare elements of the Periodic Table. • Construct models of atoms and compounds. • Recognize the difference between a chemical and physical change. • Demonstrate knowledge of the Law of Conservation of Matter. • Identify chemical and physical changes. • Demonstrate an understanding of speed. • Predict motion. • Relate energy to work. • Differentiate between forms of energy. • Describe characteristics of waves. • Observe and discuss electrical circuits.
Developing *(Continued)*	• Identify elements of the Periodic Table. • Discriminate between atoms and compounds. • Recognize when a change takes place. • Recognize that matter can not be destroyed. • Explain simple changes.

	• Compare speeds. • Recognize forces effect objects. • Demonstrate work. • Identify different forms of energy. • Observe different types of waves. • Explore different charged objects.
Introducing	• Access the Periodic Table. • Exposed to different substances. • Exposed to different reactions. • Exposed to different types of matter. • Observe change. • Exposed to time and distance through activities. • Explore the motion of objects. • Participate in movement activities. • Experience the effects of energy. • Manipulate different types of waves. • Observe effects of charge.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standards	Alternate Content Standards
9-12.L.1.1. Relate cellular functions and processes to specialized structures within cells.	9-12.A.L.1.1. Identify different cellular structures.
9-12.L.1.2. Classify organisms using characteristics and evolutionary relationship of major taxa.	9-12.A.L.1.2. Recognize organisms are classified based on characteristics.
9-12.L.1.3. Identify structures and function relationships within major taxa.	9-12.A.L.1.3. Identify how structure and function are related to each other.

Indicator 2: Analyze various patterns and products of natural and induced biological change.

General Education Standards	Alternate Content Standards
9-12.L.2.1. Predict inheritance patterns using a single allele.	9-12.A.L.2.1. Recognize traits are inherited.
9-12.L.2.2. Describe how genetic recombination, mutations, and natural selection lead to adaptations, evolution, extinction, or the emergence of new species.	9-12.A.L.2.2. Recognize organisms can become extinct.

Indicator 3: Analyze how organisms are linked to one another and the environment.

General Education Standards	Alternate Content Standards
9-12.L.3.1. Identify factors that can cause changes in stability of populations, communities, and ecosystems.	9-12.A.L.3.1. Illustrate a food chain and food web.

South Dakota 9-12 Life Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Relate basic cell functions to basic cell structures. • Classify several organisms in to groups. • Explain why different organisms have different structures. • Define the concept of dominant and recessive. • Give a reason why organisms can become extinct. • Describe populations and communities.
Applying	• Identify different cellular structures. • Recognize organisms are classified based on characteristics. • Identify how structure and function are related to each other. • Recognize traits are inherited. • Recognize organisms can become extinct. • Illustrate a food chain and food web.
Developing	• Recognize a cell and that it is made up of small parts. • Recognize animals/plants have similarities and differences. • Recognize animals/plants have similar structures for similar uses. • Recognize animals of same species have differences. • Recognize an animal that is extinct. • Identify a community.
Introducing	• Attend to the concept of cells. • Explore different types of animals/plants. • Introduced to different types of animals/plants. • Explore different types of traits. • Attend to presentation on extinct animals. • Observe different types of populations.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standards	Alternate Content Standards
9-12.E.1.1. Explain how elements and compounds cycle between living and non-living systems.	9-12.A.E.1.1. Identify cycles.
9-12.E.1.2. Describe how atmospheric chemistry may affect global climate.	9-12.A.E.1.2. Describe the effects of pollution.
9-12.E.1.3. Assess how human activity has changed the land, ocean, and atmosphere of Earth.	9-12.A.E.1.3. Identify changes in the environment due to human activity.

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

General Education Standards	Alternate Content Standards
9-12.E.2.1. Recognize how Newtonian mechanics can be applied to the study of the motions of the solar system.	9-12.A.E.2.1. Describe a planet's motion.

South Dakota 9-12 Earth/Space Science Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Summarize a cycle between living and non-living systems. • Explain the effects of pollutions. • Describe the effects of humans on the environment. • Describe a planet's motion within a solar system.
Applying	• Identify cycles. • Describe the effects of pollution. • Identify changes in the environment due to human activity. • Describe a planet's motion.

Developing	• Recognize cycles. • Identify different types of pollution. • Recognize land, ocean, and atmospheric changes due to human activity. • Demonstrate how an object rotates.
Introducing	• Attend to living and non-living. • Explore an environment that can become polluted. • Explore living conditions. • Explore characteristics of a planet.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.

Science, Technology, Environment, and Society

Goal 5: Students will identify and evaluate the relationships and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

General Education Standards	Alternate Content Standards
9-12.S.1.1. Explain ethical roles and responsibilities of scientists and scientific research.	9-12.A.S.1.1. Discuss fact and opinion as related to science.
9-12.S.1.2. Evaluate and describe the impact of scientific discoveries on historical events and social, economic, and ethical issues.	9-12.A.S.1.2. Describe the impact of science on their lives.

Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.

General Education Standards	Alternate Content Standards
9-12.S.2.1. Describe immediate and long-term consequences of potential solutions for technological issues.	9-12.A.S.2.1. Describe technological issues.
9-12.S.2.2. Analyze factors that could limit technological design.	9-12.A.S.2.2. Recognize a cause of technological limits.
9-12.S.2.3. Analyze and describe the benefits,	9-12.A.S.2.3. Relate recycling to their lives.

limitations, cost, and consequences involved in using, conserving, or recycling resources.	

South Dakota 9-12 Science, Technology, Environment, and Society Alternate Achievement Descriptors

Levels	Descriptors
Advancing	• Identify current ethical situations in science. • Explain the impact of science on their lives and in their community. • Describe consequences of a technological issue. • Explain a technological limitation. • Identify benefits of recycling.
Applying	• Discuss fact and opinion as related to science • Describe the impact of science on their lives. • Describe technological issues. • Recognize a cause of technological limits. • Relate recycling to their lives.
Developing	• Identify true and false statements as related to science. • State a simple scientific discovery has impacted life. • Indicate types of technology. • Define limits. • Recognize recycling symbols.
Introducing	• Respond to yes/no questions. • Explore simple scientific discoveries. • Use technology. • Observe various technological devices. • Participate in recycling.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate knowledge and skills once in one setting with support.